

# **Guidelines and Policies for Public Water Systems**

## **Appendix M-Consumer Confidence Reporting Guidelines**

**Updated June 05**

**Appendix M is required by the Massachusetts Drinking Water regulations 310CMR 22.16A**

***Please refer to the booklet “Recommended Tips to Provide a More User Friendly CCR” for information on how you can improve the presentation of your CCR information.***

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# Community Public Water Systems

## Introduction/Overview

All community drinking water systems are required to prepare and distribute Drinking Water Consumer Confidence Reports (CCR) by July 1 of each year. CCRs are required by the 1996 Safe Drinking Water Act Amendments.

- **Who Must Prepare Consumer Confidence Reports?**

All community water systems that serve at least 25 residents year-round, or that have 15 or more service connections must prepare and distribute a CCR. A public water system that sells its water to another community system must provide the buyer with monitoring data and other information that will enable the buyer to produce the CCR.

- **When Should the Consumer Confidence Report be Distributed?**

The data used in preparing the report is based on a calendar year. CCR reports should be delivered to customers by July 1 of each year.

Public water systems that sell to a community system must deliver all the pertinent information to their buyers by April 1 each year. For all new community water systems, the first CCR is due July 1 of the year following the first full year of operation, and annually thereafter.

- **What Information is Required?**

**Summary of required information**

Although the community water supplier will have some flexibility in determining the form and content, the annual report **must** contain the following information:

- PWS basic information e.g. PWS name, ID#, reporting year, etc.
- Source(s) of the drinking water;
- Levels of any contaminant detected, and EPA's health standard (maximum contamination level, or MCL);
- Definitions for MCL, MCLG, MRDL, MRDLG, treatment technique, and action level; variances and exemptions if applicable;
- Potential health effects of any contaminant detected in violation of an EPA health standard, the length of the violation, the likely sources of the contaminant in the water supply, and corrective measures taken to address the violation;
- Compliance with other drinking water regulations, such as monitoring and reporting for compliance data, record keeping, filtration, disinfection, cross connection control, and lead and copper control;
- Information on obtaining a copy of the water supplier's source water assessment;
- Required language and educational information; and a statement that the presence of contaminants in drinking water does not necessarily indicate that the water poses a health risk;

- Phone numbers for additional sources of information including the water system's telephone number and EPA's Safe Drinking Water Hotline 800-426-4791; and
- Informational statements on *Cryptosporidium*, arsenic, nitrate and lead if necessary.

## **Report Content**

### **Water System and Source Water Information**

Each CCR must include:

- The name of the public water system, PWS ID #, report year, etc.
- Name and telephone number of a person at the water system who can provide additional information and answer questions about the report.
- Information on public education and/or public meetings to discuss water quality issues.
- Description of source(s) (ground water, surface water, or blend), and location(s); for security purposes, you do not need to use a map of your system. A simple location description such as "Collar Street Wells" is sufficient.
- Explanation of any interconnections and back-up sources to note source variation during the year.
- Required Educational Information  
See Required Educational Information section on page 9.

### **Source Water Assessment Program (SWAP)**

DEP has prepared source water assessments for all public water systems as required by the Safe Drinking Water Act amendments. Each CCR must include the following:

- Highlight significant sources of contamination in the source water area if information is readily available;
- Include a brief summary of the water system's susceptibility to potential sources of contamination, using language provided by DEP;
- Notify consumers of the availability of the report and the means to obtain it. (SWAP reports can be found at <http://www.mass.gov/dep/brp/dws/swap.htm>)

The water system may wish to provide more source protection information to inform and involve customers. Consider adding the information noted below.

- The number and type of sources your system uses (reservoirs, bedrock wells, wells in sand and gravel, purchased water or a combination).

- A simple locus map of water sources and their protection areas (Zone I, II, IWPA, A, B, C).
- Source susceptibility and protection measures, for example:  
*“The Anytown Water Department owns 67% of the watershed of Great Pond Reservoir. The remainder of the acreage is largely low-density residential development.”*  
 Or  
*“Wells #1 and #2 are located in an area of mixed residential, commercial, and industrial development. The Town of Waterville has adopted a bylaw to prohibit inappropriate future commercial and industrial development in the area; and the Board of Health has an inspection and education program in place for local businesses.”*
- The public water system’s educational efforts with the public, schools, and the business community.
- Measures citizens can use to protect their water source for example:  
*“One of the biggest threats to the Main Street Well is improperly maintained septic systems. You can help protect your drinking water quality by pumping out your septic system every two years. Never dump hazardous substances down septic or storm drains. Do not use septic system cleaners.”*
- Volunteer opportunities, for example:  
*“Contact Amy Smith to volunteer for water quality monitoring teamwork, education programs or assisting town committees.”*
- Local contact name for more information on protection issues.

### **Language Requirements for Systems with Large Populations**

If your system serves communities with **10% or greater than 1,000 people** (whichever is less) of non-English speaking consumers, the **report must contain a statement in the appropriate language(s)** regarding the importance of the report.

If **25% or more** of the population served by the system speaks one particular language, the **entire report must be translated** into that specific language.

In order to determine which cities have a large population, of non-English speaking persons, the Department used the 2000 Census data. This information does not reflect actual ethnic populations in all cities; but does show the actual number of persons who speak a language other than English in a household. This information is currently the best available to determine which ethnic populations will require information in their native language.

(See Attachment I to determine whether or not your water system serves a city or town with language requirements.)

## **Required Definitions**

The following definitions **must** be included in the CCR for understanding the contamination data.

**Maximum Contaminant Level or MCL:** The highest level of a contaminant in drinking water. MCLs are set as close to the MCLGs (see below) as feasible using the best available treatment technology.

**Maximum Contaminant Level Goal or MCLG:** The level of a contaminant in drinking water below, which there is no known or expected risk to health. MCLGs allow for a margin of safety.

The following definitions must be included in the report **only if** your report contains information on a contaminant that is regulated by an Action Level or Treatment Technique. The definition for 90<sup>th</sup> Percentile is optional.

**Action Level:** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system must follow.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

**90<sup>th</sup> Percentile:** Out of every 10 homes, 9 were at or below this level.

The following definitions must be included in the report **only if** the system adds a chemical disinfectant or oxidant and is regulated by the Disinfection Byproducts Rule (310 CMR 22.07E).

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG)** -- The level of a drinking water disinfectant below which there is no known expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

The following definition must be included in the CCR **only if** the water system was under a variance or exemption during the previous calendar year.

**Variances and Exemptions:** State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

## **Detection of Regulated Contaminants**

A detected contaminant is any contaminant observed at or above its minimum laboratory detection limit. If the detect is found below the minimum detection level, the system is not required to mention that contaminant.

The CCR must contain a table showing the highest level of each detected contaminant and the range of levels of that contaminant for the year, if more than one sample was taken. The table must also contain:

- Maximum Contaminant Level (MCL);
- The Maximum Contaminant Level Goal (MCLG);
- MRDLG/MRDL if using chemical disinfectants or oxidants; and
- The likely source(s) of contaminant.

Use of CCR Units would require that the MCL be expressed as a number greater than 1.0. Report the MCLG and level of the detected contaminant in those same units. For example, atrazine is usually reported in mg/l. The MCL for atrazine is 0.003 mg/l. If the system detected atrazine at 0.0003mg/l, it is assumed that it would be difficult for consumers to understand at a glance that your water is 10 times below the MCL.

See Attachment C for help in converting MCLs and monitoring data for the CCR.

- The CCR should reflect monitoring performed for the past calendar year. If there is no recent monitoring data for a source, include in the table the latest monitoring information available, but not data older than 5 years. For example, if the system samples for a contaminant once every three years, it would need to report the same detected level in each of the three years until it takes a new sample as well as the date that the sample was taken. Include a statement explaining why the system does not monitor regularly for the contaminants in question; for example:  
*“The Massachusetts Department of Environmental Protection has reduced the monitoring requirements for \_\_\_\_\_ to less often than once per year because the source is not at risk of contamination. The last sample collected was on \_\_\_\_\_, and was found to be free of this contaminant.”*

## **Table Inclusion for Detected Regulated Contaminants**

The following must be included for each detected regulated contaminant:

- **Level of contaminant.** Must be expressed in the same units as the MCL and MCLG.
- **Highest detected level.** If compliance is determined annually or less frequently, include the highest detected level at any sampling point and the range of detected levels, if applicable.
- **Highest average.** If compliance is determined by a running annual average of all the samples taken from a sampling point, include the highest average of any of the

sampling points (as reported to the state for compliance purposes) and the range of detections.

- **Average and range.** If compliance is determined by a running annual average of all samples at all sampling points, include the average of all samples and the range of detected levels. If an MCL was exceeded in the calendar year, due to a high level in the previous calendar year, please include the previous data.
- **Turbidity.** When reported as an MCL for systems that must install filtration but have not, include the highest average monthly value.
- **Turbidity.** When reported as a TT for systems that meet the criteria for avoiding filtration, include the highest monthly value. Explain the reasons for measuring turbidity; for example: “Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality.”
- **Turbidity.** When reported as a TT for systems that filter and use turbidity as an indicator of filtration performance, include the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in 310 CMR 22.20 for the relevant filtration technology. Explain the reasons for measuring turbidity; for example: “Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.”
- **Lead and copper.** Include the 90<sup>th</sup> percent value from the most recent sampling and the number of sampling sites exceeding the action level.
- **Total coliform.** Systems that collect fewer than 40 samples per month must include the highest number of positive samples collected in any one month.
- **Total coliform.** Systems that collect 40 or more samples per month must include the highest percentage of positive samples collected in any one month.
- **Fecal coliform and *E. coli*.** Include the number of positive samples.
- Any contaminant detected in violation of an MCL, MRDL, treatment technique, or exceeding an action level must be clearly highlighted in the table. Explain the length of the violation/exceedence, likely source, the potential health effects (*see Attachment C*), and actions taken to address the violation or exceedence in a subsequent paragraph.

## **Unregulated Contaminants**

If the system detects unregulated contaminants for which state or federal rules require monitoring, except for *Cryptosporidium*, include the average of the entire year's monitoring results and the range of detections. Include an explanation for the system's monitoring of unregulated contaminants, such as this:

*“Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted”.*

If voluntary monitoring indicates the presence of unregulated contaminants in the finished water, DEP encourages you to report any results that may indicate a health concern, that is, any detection above a proposed MCL or health advisory level to indicate concern.

EPA recommends that the report include the results of the monitoring and an explanation of the significance of the results. Note any health advisory or proposed MCL.

### **Cryptosporidium**

If monitoring indicates the presence of *Cryptosporidium* either in the source water or finished water, the CCR must include the following:

- A summary of the results of the monitoring; and
- An explanation of the significance of the results. The report must tell customers if they need to be concerned by the information in the CCR.

Example:

*“Cryptosporidium is a microbial parasite found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100% removal. Our monitoring indicates the presence of these organisms in our source water and/or finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps.*

*Most healthy individuals are able to overcome the disease within a few weeks. However, immuno-compromised people have more difficulty and are at greater risk of developing severe, life-threatening illness. Immuno-compromised individuals are encouraged to consult their doctor regarding appropriate precautions to prevent infection. Cryptosporidium must be ingested for it to cause disease, and may be passed through other means than drinking water.”*

### **Radon**

If monitoring indicates the presence of radon in finished water, include in the report:

- The results of monitoring; and
- An explanation of the significance of the results. The report must tell customers if they need to be concerned by the information in the CCR.

Example:

*“Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the United States. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will be (in most cases) a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 picocuries of radon per liter of air (pCi/l) or higher. There are simple ways to fix a radon problem that aren’t too costly. For additional information, call your State radon program or call EPA’s Radon Hotline, 800.SOS.RADON.”*

### **Compliance with Other Drinking Water Regulations**

If the water system has violated any of the national drinking water regulatory requirements during the reporting period, the CCR must describe the violation(s). This description must include a clear explanation of the violation, any adverse health effects, and steps taken by the system to correct the violation. The following must be included:

- Monitoring and reporting compliance data;
- Filtration and disinfection processes; if the violation was due to a failure to install adequate filtration or disinfection equipment or processes; or there was a failure of that equipment or process, the following language must be included in the CCR:  
*“Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.”*
- **Lead and copper requirements;** if the violation was a failure to meet corrosion control treatment, source water treatment, or lead service requirements, you must include health effects language for lead and copper. See Attachment C.
- **Treatment techniques for Acrylamide and Epichlorohydrin;** if either treatment technique is violated, the appropriate health effects language must be included. See Attachment B.
- **Record keeping requirements;**
- **Special monitoring requirements;**
- **Violation of the terms of a variance, an exemption, or and administrative or judicial order.**
- **Capacity;** Report any capacity deficiencies as determined by this Department.
- **Violations;** When an event occurs during the reporting year, which causes a PWS to violate the Surface Water Treatment Rule (SWTR) or any other drinking water standard, that violation must be included in the CCR, and
- **Any additional information specifically requested by this Department.**

**If the system is operating under a variance or exemption at any time during the reporting year the following must be included:**

- An explanation of the variance or exemption;
- The date it was issued and reason why it was granted;
- A status report on what the system is doing to remedy the problem; and
- A notice to the public for input on the review or renewal of variance or exemption.

### **Required Educational Information**

The CCR **must** contain the following statements about drinking water. The first statement is to acknowledge that it is normal to find low levels of some contaminants in drinking water. The second statement explains the vulnerability of some populations to contaminants in drinking water.

1. *“Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA’s Safe Drinking Water Hotline (1-800-426-4791).”*

2. *“Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).”*

### **Sources of Drinking Water and Drinking Water Contaminants**

Community Water Systems **must** include information on sources of drinking water, contaminants that may be present in drinking water, and reasons for EPA and FDA regulations. The following language can be used, or you may develop your own comparable language. However, some form of the following language is required in the report:

*“Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.*

*Contaminants that may be present in source water include:*

**Microbial contaminants**, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

**Inorganic contaminants**, such as salts and metals can be naturally-occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, and farming.

**Pesticides and herbicides**, may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

**Organic chemical contaminants**, include synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

**Radioactive contaminants** can be naturally occurring or be the result of oil and gas production, and mining activities.

*In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water that must provide the same protection for public health.”*

#### **Special requirements for Nitrate, Arsenic, Lead, and Trihalomethanes**

For arsenic, nitrate, and lead, a special educational statement is required if the water system detected:

- Nitrate above 5 mg/l (50% of the MCL), but below the MCL;
- Arsenic above 25 ug/l (50% of the MCL), but below the MCL. Note that the arsenic MCL is being lowered to 0.01 mg/l on January 23, 2006. 50% of the MCL will be 0.005 mg/l or 5 ug/l at that time; or
- Lead above the Action Level in more than 5%, and up to and including 10%, of the homes sampled.

The following statements can be used. Different language may be used with permission from DEP.

**Nitrate.** *“Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.”*

**Arsenic.** *“EPA is reviewing the drinking water standard for arsenic because of special concerns that it may not be stringent enough. Arsenic is a naturally occurring mineral known to cause cancer in humans at high concentrations.”*

**Lead.** *“Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home’s plumbing. If you are concerned about elevated lead levels in your home’s water, you may wish to have your water tested. Flush your tap for 30 seconds to 2 minutes before using*

*tap water to reduce lead content. Additional information is available from the Safe Drinking Water Hotline, 1.800.426.4791.”*

**Trihalomethanes.** Systems that detect Total Trihalomethanes (TTHMs) above 0.080 mg/l, but below the MCL of 0.10 mg/l, as an annual average (monitored and calculated under the provisions of 310 CMR22.07 must include the following health effects language:

*“Some people who drink water containing trihalomethanes in excess of the MCL over many years experience problems with their liver, kidneys, or central nervous systems. They may have a greater risk of getting cancer.”*

### **Recommended Additions to CCR Reports**

DEP recommends additional information:

- Information on water fluoridation;
- Information on source treatment;
- An additional statement on lead for those systems in compliance;
- Use of a template: Attachment B lists templates that can be used to alleviate the preparation and designing of the CCR. Systems will have to enter their own monitoring data into the formatted report, and any additional MCL, MRDL and/or health effects information.

### **Report Delivery**

All community water systems must deliver a copy of the CCR to every customer and make a good faith effort to get reports to non-billed consumers. The CCR must be received by July 1<sup>st</sup> of each year. Also, send two copies to DEP (1 copy to the Boston office and 1 copy to your regional office) by the same deadline. Submit a completed certification form to both DEP offices with your CCR showing that the report was distributed, and that its information is correct and consistent with the compliance monitoring data submitted to DEP during the report year. **See Attachment A for the certification form.**

The CCR will contain vital information that local boards of health would be interested in reviewing. Therefore, community public water systems are **required** to deliver a copy of the CCR to the local board of health office and the Massachusetts Department of Public Health by July 1<sup>st</sup> of each year. Because many customers of public water systems, such as apartment dwellers, may not receive a bill, it is the public water system’s responsibility to make a good faith effort to reach these consumers. Community public water systems are required to do at least three of the following:

- Post report in the lobby of apartment complexes;

- Place an ad in a local newspaper stating copies are available from the Community Water System;
- Announce on local radio or television stations;
- Post CCR in Town or City Hall;
- Place copies of the CCR in the local public library closest to your facility;
- Post a notice (in main lobby of apartment complexes) stating that the CCR is posted on a website, and give the Internet address (URL);
- Publish the report in local newspaper(s);
- Deliver the report to community organizations.

**Systems serving greater than 100,000 persons.** A CCR must be posted on the Internet. Use the water system or local town web page to post the report. Be sure to include the web address in the CCR.

**Systems serving fewer than 10,000 persons.** The Commissioner of DEP has approved a mailing waiver allowing systems to mail the CCR to all customers or print the CCR in its entirety in a local newspaper(s).

**Systems serving fewer than 500 persons.** The CCR does not have to be mailed or published in a newspaper. However, the system must notify customers through mail or post a notice in a local newspaper. State that the CCR is available from the system and include a contact telephone number.

### **Where to Send Your Report**

By July 1 of each year, public water systems are required to send a set of copies i.e. the CCR and certification form (Attachment G) to DEP, the local board of health, and the Department of Public Health

#### **Send 1 copy to DEP Boston**

MA DEP  
Drinking Water Program  
One Winter Street 6<sup>th</sup> Floor  
Boston, MA 02108  
671-292-5770

#### **Send 1 copy to your DEP Regional Office.**

DEP Western Regional Office  
State House West, 5<sup>th</sup> Floor  
436 Dwight Street  
Springfield, MA 01103  
413-784-1100

DEP Central Regional Office  
Drinking Water Program  
627 Main Street  
Worcester, MA 01608  
508-792-7650

DEP Northeast Region  
Drinking Water Program  
One Winter Street – 5<sup>th</sup> Floor  
Boston, MA 02108  
617-654-6500

DEP Southeast Region  
Drinking Water Program  
20 Riverside Drive  
Lakeville, MA 02347  
508-946-2700

**Send 1 copy to your local board of health.**

**Send 1 copy to:**

Massachusetts Department of Public Health  
Bureau of Environmental Health  
250 Washington Street  
Boston, MA 02108-4619  
212-624-6000

Community Public Water Suppliers are the main source of distribution for CCRs and are required to keep copies of CCR on file for no less than **three years** and provide copies upon request.

Visit these websites for templates and more information.

<a href="http://www.state.ma.us/dep">www.state.ma.us/dep</a>	Department of Environmental Protection Website
<a href="http://www.epa.gov/ogwdw">www.epa.gov/ogwdw</a>	Environmental Protection Agency Website
<a href="http://www.awwa.org">www.awwa.org</a>	American Water Works Association
<a href="http://www.newwa.org">www.newwa.org</a>	New England Water Works Association
<a href="http://www.rcap.org">www.rcap.org</a>	Rural Community Assistance Program

For more information contact the EPA Safe Drinking Water Hotline: 800-426-4791

For a guide to making your CCR more user-friendly visit the DEP website and refer to the DEP booklet “Recommended Tips to provide a more user friendly CCR”

## **Non Community Public Water Systems**

Non-community public water systems are required to post their Annual Drinking Water Quality Report (commonly referred to as the non-community CCR) when provided by the Department. This report must be posted in a conspicuous location specified by the Department. The report must remain posted until the Department provides a new report.

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# Consumer Confidence Report Certification Form

(Return this form to DEP with your CCR report)

PWS Name: \_\_\_\_\_

City/Town: \_\_\_\_\_ PWS I.D. #: \_\_\_\_\_

The community water system named above hereby confirms that its Consumer Confidence Report (CCR) was distributed to each customer and/or appropriate notices of availability have been given in compliance with 310 CMR 22.16A (14). Further, the system certifies that the information contained in the report is correct and consistent with the compliance monitoring data previously submitted to the Massachusetts Department of Environmental Protection.

## Certified by:

Name \_\_\_\_\_ Signature \_\_\_\_\_

Title \_\_\_\_\_

Phone # \_\_\_\_\_ Date \_\_\_\_\_



Check all items that apply. (Note: **ALL** distribution/delivery/publication must be completed **BEFORE JULY 1<sup>st</sup>**)

## CONSUMER DELIVERY METHODS –Based on Population Served

### For Systems serving fewer than 500 persons Choose 1 or 2

1. ☐ On \_\_\_\_\_ (date) my system used one or more of the following methods to notify customers that the CCR would not be mailed directly to them and is available to them upon request. (A copy of the notice is attached).  
☐ Mail ☐ door-to-door delivery ☐ newspaper ☐ posting notice in the following locations \_\_\_\_\_
2. ☐ On \_\_\_\_\_ (date) my system provided a copy of the CCR to each customer by one of the following methods:  
☐ Published the report in a local newspaper (a copy of the published report is attached).  
☐ Directly mailed or delivered a CCR to consumers.

### For Systems serving between 500 and 9,999 persons Choose 1 or 2

1. ☐ On \_\_\_\_\_ (date) my system published the full report in a local newspaper (copy of published CCR is attached). In addition, my system used one of the following methods to notify customers that the CCR would not be mailed directly to them and is available to them upon request.  
☐ Published notification in the same local newspapers in which the report was published (copy of notification is attached)  
☐ Provided notification by a statement in a bill or newsletter (copy of bill or newsletter is attached), or
2. ☐ On \_\_\_\_\_ (date) my system provided a copy of the CCR to each customer by direct mail or delivery.

### For Systems serving 10,000 or greater persons Choose 1 or 2 (plus 3 if population is over 100,000.)

1. ☐ On \_\_\_\_\_ (date) my system provided a copy of the CCR to each customer by direct mail.
2. ☐ On \_\_\_\_\_ (date) my system provided a copy of the CCR to each customer by the following direct delivery methods (other than mail): \_\_\_\_\_.
3. ☐ In addition to one of the delivery methods checked above, my system serves greater than 100,000 persons and as required has posted the CCR on a publicly accessible Internet site at the following address: www. \_\_\_\_\_.

## GOOD FAITH DELIVERY METHODS – All systems must conduct a minimum of three of the following :

- ☐ Posted CCR on a publicly accessible Internet site at the following address: www. \_\_\_\_\_.
- ☐ Mailed the CCR to all postal patrons within the service area. (List of zip codes used is attached)
- ☐ Advertised availability of the CCR in the following news media (a copy of the announcement is attached):  
☐ Radio ☐ newspaper ☐ television/cable
- ☐ Published CCR in local newspaper (a copy of the published CCR is attached)
- ☐ Posted the CCR in public places, including post office, town hall and public library (a list of locations is attached)
- ☐ Delivered multiple copies to single bill addresses serving several persons: i.e. apartments, businesses, and large private employers
- ☐ Delivered to community organizations (list of organizations is attached).
- ☐ Post report or notice of availability in the lobby of apartment complexes
- ☐ Other: \_\_\_\_\_.

## MANDATORY AGENCY DELIVERY REQUIREMENTS – For ALL systems

- ☐ Delivered 1-copy of CCR and 1-copy of Certification Form to the local Board of Health on \_\_\_\_\_ (date).
- ☐ Delivered 1-copy of CCR and 1-copy of Certification Form to MA Dept. of Public Health on \_\_\_\_\_ (date).
- ☐ Delivered 1-copy of CCR and 1-copy of Certification Form to MA DEP Boston Office on \_\_\_\_\_ (date).
- ☐ Delivered 1-copy of CCR, 1-copy of Certification Form **and** 1-copy of ALL the attachments check-marked above to the appropriate DEP Regional Office on \_\_\_\_\_ (date).

## List of Consumer Confidence Report Help Aides

The DEP encourages systems to use a template whenever possible in order to simplify reports. There are a number of templates available to assist you in preparing your CCR. The following is a list of Internet sites to visit or organizations that can help your water system prepare the report.

The Massachusetts DEP, Drinking Water Program, developed a template to assist water systems complete their CCR. This template has clear instructions and may be downloaded by the user. This template is free of charge and can be found on our website at: <http://www.mass.gov/dep/brp/dws/ccr.htm>

You may also contact the regional offices for support:

NERO - Bill Zahoruiko 617-654-6539

CERO – Liz Kotowski 508-767-2779

WERO – Dede Cabral 413-755-2148 or Eva Tor 413-755-2295

SERO – Dan DiSalvio 508-946-2793

The Massachusetts Rural Water Association (MRWA) developed this template by sections to allow you to customize your report. You can use the headings they have created, or type in your own. It is easy to use and has all the information laid out so you can copy and paste those sections that apply to your system. This template is **available to members only at no charge** and can be ordered by contacting MRWA at (802) 660-4988.

EPA's template is available on their web page at <http://www.epa.gov/safewater/ccr1.html>. EPA has developed CCRWriter (v2) software and CCRiWriter website to help water suppliers create their consumer confidence reports.

The Massachusetts Coalition of Small Systems Assistance is a partnership of New England Water Works Association, Mass Water Works Association, Massachusetts Rural Water Association, and RCAP Solutions, which will help you with your CCR. Contact Lynda Laine at <http://www.maruralwater.org/>.

## Regulated Contaminants

## Key

**AL**=Action Level**MCL**=Maximum Contaminant Level**MCLG**=Maximum Contaminant Level Goal**MFL**=Million Fibers per Liter**MRDL**=Maximum Residual Disinfectant Level**MRDLG**=Maximum Residual Disinfectant Level Goal**mrem/year**=millirems per year (a measure of radiation absorbed by the body)**NTU**=Nephelometric Turbidity Units**pCi/l**=picocuries per liter (a measure of radioactivity)**ppm**=parts per million, or milligrams per liter (mg/l)**ppb**=parts per billion, or micrograms per liter (1g/l)**ppt**=parts per trillion, or nanograms per liter**ppq**=parts per quadrillion, or picograms per liter**TT**=Treatment Technique

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
<b>Microbiological Contaminants</b>						
(1) Total Coliform Bacteria	MCL: presence of coliform bacteria in >5% of monthly samples			0	Naturally present in the environment	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
(2) Fecal coliform and <i>E. coli</i>	MCL: a routine sample and a repeat sample are total coliform positive, and one is also fecal coliform or <i>E. coli</i> positive			0	Human and animal fecal waste	Fecal coliforms and <i>E. coli</i> are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely-compromised immune systems.
(3) Total organic carbon	TT	-	TT	n/a	Naturally Present in the environment	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection by products. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increase risk of getting cancer.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
(4) Turbidity	TT	-	TT	n/a	Soil runoff	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.
<b>Radioactive Contaminants</b>						
(5) Beta/photon emitters (mrem/yr)	4 mrem/yr	-	4	0	Decay of natural and man-made deposits	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
(6) Alpha emitters (pCi/l)	15 pCi/l	-	15	0	Erosion of natural deposits	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
(7) Combined radium (pCi/l)	5 pCi/l	-	5	0	Erosion of natural deposits	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer
(8) Uranium (ppm)	30	-	30	0	Erosion of natural deposits	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity
<b>Inorganic Contaminants</b>						
(9) Antimony (ppb)	.006	1000	6	6	Discharge from fire retardants; ceramics; electronics; solder	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
(10) Arsenic (ppb) <sup>1</sup>	.01	1000	10	n/a	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
(11) Asbestos (MFL)	7 MFL	-	7	7	Decay of asbestos cement water mains; Erosion of natural deposits	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
(12) Barium (ppm)	2	-	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
(13) Beryllium (ppb)	.004	1000	4	4	Discharge from electrical, aerospace, and defense industries; erosion of natural deposits	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
(14) Bromate (ppb)	.010	1000	10	0	By-product of drinking water disinfection	Some people who drink water containing bromate in excess of the MCL over many years have an increased risk of getting cancer.
(15) Cadmium (ppb)	.005	1000	5	5	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
(16) Chromium (ppb)	.1	1000	100	100	Discharge from pulp mills; Erosion of natural deposits	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
(17) Chloramines (ppm)	MRDL= 4		MRDL= 4	MRDLG= 4	Water additive used to control microbes	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience

<sup>1</sup> These arsenic values are effective January 23, 2006. Until then, the MCL is 0.05 mg/l and there is no MCLG.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
						stomach discomfort or anemia.
(18) Chlorine (ppm)	MRDL= 4	-	MRDL= 4	MRDLG= 4	Water additive used to control microbes	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
(19) Chlorine dioxide (ppb)	MRDL= .8	1000	800	MRDLG= 800	Water additive used to control microbes	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.
(20) Chlorite (ppm)	1	-	1	0.8	By-product of drinking water disinfection	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
(21) Copper (ppm)	AL=1.3	-	AL=1.3	1.3	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
(22) Cyanide (ppb)	.2	1000	200	200	Discharge from metal factories; Discharge from plastic and fertilizer factories	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
(23) Fluoride (ppm)	4	-	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
(24) Lead (ppb)	AL=.015	1000	AL=15	0	Corrosion of household plumbing systems; Erosion of natural deposits	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
(25) Mercury [inorganic] (ppb)	.002	1000	2	2	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
(26) Nitrate (ppm)	10	-	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
(27) Nitrite (ppm)	1	-	1	1	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
(28) Selenium (ppb)	.05	1000	50	50	Discharge from metal refineries; Erosion of natural deposits; Discharge from mines	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
(29) Thallium (ppb)	.002	1000	2	0.5	Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.
<b>Synthetic Organic Contaminants including Pesticides and Herbicides</b>						
(30) 2,4-D (ppb)	.07	1000	70	70	Runoff from herbicide used on row crops	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
(31) 2,4,5-TP [Silvex](ppb)	.05	1000	50	50	Residue of banned herbicide	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
(32) Acrylamide	TT	-	TT	0	Added to water during sewage/wastewater treatment	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
(33) Alachlor (ppb)	.002	1000	2	0	Runoff from herbicide used on row crops	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
(34) Atrazine (ppb)	.003	1000	3	3	Runoff from herbicide used on row crops	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
(35) Benzo(a)pyrene [PAH] (ppt)	.0002	1,000,000	200	0	Leaching from linings of water storage tanks and distribution lines	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
(36) Carbofuran (ppb)	.04	1000	40	40	Leaching of soil fumigant used on rice and alfalfa	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
(37) Chlordane (ppb)	.002	1000	2	0	Residue of banned termiticide	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
(38) Dalapon (ppb)	.2	1000	200	200	Runoff from herbicide used on rights of way	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
(39) Di(2-ethylhexyl) adipate (ppb)	.4	1000	400	400	Discharge from chemical factories	Some people who drink water containing di (2-ethylhexyl) adipate well in excess of the MCL over many years could experience toxic effects such as weight loss, liver enlargement, or possible reproductive difficulties.
(40) Di(2-ethylhexyl) phthalate (ppb)	.006	1000	6	0	Discharge from rubber and chemical factories	Some people who drink water containing di (2-ethylhexyl) phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
(41) Dibromochloropropane (ppt)	.0002	1,000,000	200	0	Runoff/leaching from soil fumigant used on soybeans, cotton, and orchards	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive problems and may have an increased risk of getting cancer.
(42) Dinoseb (ppb)	.007	1000	7	7	Runoff from herbicide used on soybeans and vegetables	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
(43) Diquat (ppb)	.02	1000	20	20	Runoff from herbicide use	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
(44) Dioxin [2,3,7,8-TCDD] (ppq)	.00000003	1,000,000,000	30	0	Emissions from waste incineration and other combustion; Discharge from chemical factories	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
(45) Endothall (ppb)	.1	1000	100	100	Runoff from herbicide use	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
(46) Endrin (ppb)	.002	1000	2	2	Residue of banned insecticide	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
(47) Epichlorohydrin	TT	-	TT	0	Discharge from industrial chemical factories; An impurity of some water treatment chemicals	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.
(48) Ethylene dibromide (ppt)	.00002	1,000,000	20	0	Discharge from petroleum refineries	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
(49) Glyphosate (ppb)	.7	1000	700	700	Runoff from herbicide use	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
(50) Heptachlor (ppt)	.0004	1,000,000	400	0	Residue of banned pesticide	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
(51) Heptachlor epoxide (ppt)	.0002	1,000,000	200	0	Breakdown of heptachlor	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.
(52) Hexachlorobenzene (ppb)	.001	1000	1	0	Discharge from metal refineries and agricultural chemical factories	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
(53) Hexachlorocyclopentadiene (ppb)	.05	1000	50	50	Discharge from chemical factories	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
(54) Lindane (ppt)	.0002	1,000,000	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
(55) Methoxychlor (ppb)	.04	1000	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
(56) Oxamyl [Vydate] (ppb)	.2	1000	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
(57) PCBs [Polychlorinated biphenyls] (ppt)	.0005	1,000,000	500	0	Runoff from landfills; Discharge of waste chemicals	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
(58) Pentachlorophenol (ppb)	.001	1000	1	0	Discharge from wood preserving factories	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
(59) Picloram (ppb)	.5	1000	500	500	Herbicide runoff	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
(60) Simazine (ppb)	.004	1000	4	4	Herbicide runoff	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
(61) Toxaphene (ppb)	.003	1000	3	0	Runoff/leaching from insecticide used on cotton and cattle	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.
<b>Volatile Organic Contaminants</b>						

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
(62) Benzene (ppb)	.005	1000	5	0	Discharge from factories; Leaching from gas storage tanks and landfills	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
(63) Carbon tetrachloride (ppb)	.005	1000	5	0	Discharge from chemical plants and other industrial activities	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
(64) Chlorobenzene (ppb)	.1	1000	100	100	Discharge from chemical and agricultural chemical factories	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
(65) o-Dichlorobenzene (ppb)	.6	1000	600	600	Discharge from industrial chemical factories	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
(66) p-Dichlorobenzene (ppb)	.005	1000	5	5	Discharge from industrial chemical factories	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
(67) 1,2-Dichloroethane (ppb)	.005	1000	5	0	Discharge from industrial chemical factories	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
(68) 1,1-Dichloroethylene (ppb)	.007	1000	7	7	Discharge from industrial chemical factories	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
(69) cis-1,2-Dichloroethylene (ppb)	.07	1000	70	70	Discharge from industrial chemical factories	Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
(70) trans-1,2-Dichloroethylene (ppb)	.1	1000	100	100	Discharge from industrial chemical factories	Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
(71) Dichloromethane (ppb)	.005	1000	5	0	Discharge from pharmaceutical and chemical factories	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
(72) 1,2-Dichloropropane (ppb)	.005	1000	5	0	Discharge from industrial chemical factories	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
(73) Ethylbenzene (ppb)	.7	1000	700	700	Discharge from industrial chemical factories	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
(74) Haloacetic Acids (HAA5) (ppb)	.060	1000	60	n/a	By-product of drinking water disinfection	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
(75) Styrene (ppb)	.1	1000	100	100	Discharge from rubber and plastic factories; Leaching from landfills	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
(76) Tetrachloroethylene (ppb)	.005	1000	5	0	Discharge from factories and dry cleaners and asbestos cement lined pipes	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
(77) 1,2,4-Trichlorobenzene (ppb)	.07	1000	70	70	Discharge from textile-finishing factories	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major Sources in Drinking Water	Health Effects Language
(78) 1,1,1-Trichloroethane (ppb)	.2	1000	200	200	Discharge from metal degreasing sites and other factories	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
(79) 1,1,2-Trichloroethane (ppb)	.005	1000	5	3	Discharge from industrial chemical factories	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.
(80) Trichloroethylene (ppb)	.005	1000	5	0	Discharge from metal degreasing sites and other factories	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
(81) TTHMs [Total trihalomethanes] (ppb)	.10	1000	100	n/a	By-product of drinking water disinfection	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
(82) Toluene (ppm)	1	-	1	1	Discharge from petroleum factories	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
(83) Vinyl Chloride (ppb)	.002	1000	2	0	Leaching from PVC piping; Discharge from plastics factories	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
(84) Xylenes (ppm)	10	-	10	10	Discharge from petroleum factories; Discharge from chemical factories	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

### Unregulated Contaminants Sources to Drinking Water and Health Effects

CHEMICAL (CASRN)	SOURCE TO DRINKING WATER	HEALTH EFFECTS
Aldrin (309002)	Run-off from insecticide use	Some people who drink water containing aldrin in high concentrations for many years could experience liver damage, kidney effects.
Bromobenzene (108861)	Discharge from use in chemical manufacturing	Some people who drink water containing in high concentrations of bromobenzene for many years could experience central nervous system effects
Bromomethane (74839)	Run-off from use as a fumigant	Some people who drink water containing bromomethane at high concentrations for many years could experience digestive tract effects, and headaches.
Bromodichloromethane (75274 )	Trihalomethane ; by-product of drinking water chlorination	Some people who drink water containing bromodichloromethane at high concentrations for many years could experience liver and kidney problems.
Bromoform (75252)	Trihalomethane; by- product of drinking water chlorination	Some people who drink water containing bromoform at high concentrations for many years could experience liver and kidney problems.
Butachlor (23184669)	Run-off from use as a herbicide	Some people who drink water containing butachlor at high concentrations for many years could experience liver effects.
Butylbenzene Isomers ( <i>n;sec;tert</i> )	Run-off from industrial use	Some people who drink water containing butylbenzene isomers at high concentrations for many years for many years could experience central nervous system effects.
Carbaryl (63252)	Run-off from use as an insecticide	Some people who drink water containing carbaryl at high concentrations for many years for many years could experience kidney and liver effects.
Chloroethane (75003)	Discharge from industrial uses	Some people who drink water containing chloroethane at high concentrations for many years could experience dizziness, nausea, and vomiting.
Chloroform ( 67663 )	Trihalomethane; by-product of drinking water chlorination. [In non-chlorinated sources Chloroform may be naturally occurring]*.	Some people who drink water containing bromomethane at high concentrations for many years could experience liver and kidney problems and may have an increased risk of cancer.
Chloromethane (74873)	Discharge from industrial uses	Some people who drink water containing chloromethane at high concentrations for many years could experience dizziness and fatigue.
o-chlorotoluene (95498)	Discharge from industrial use	Some people who drink water containing o-chlorotoluene at high concentrations for many years could experience central nervous system effects.
Dibromochloromethane ( 124481)	Trihalomethane; by-product of drinking water chlorination	Some people who drink water containing bromoform at high concentrations for many years could experience liver and kidney problems.
Dicamba (1918009)	Run-off from use as a herbicide	Some people who drink water containing dicamba at high concentrations for many years could experience central nervous system effects.

CHEMICAL (CASRN)	SOURCE TO DRINKING WATER	HEALTH EFFECTS
m-Dichlorobenzene (541731)	Discharge from use in chemical manufacturing	Some people who drink water containing m-dichlorobenzene at high concentrations for many years could experience damage to red blood cells.
Dichlorodifluoromethane (Freon 12) (75718)	Discharge from use as a refrigerant	Some people who drink water containing dichlorodifluoromethane at high concentrations for many years could experience dizziness and headaches.
1,1-Dichloroethane (75343)	Discharge from use as a degreasing agent	Some people who drink water containing 1,1-dichloroethane at high concentrations for many years could experience liver and kidney effects.
2,2-Dichloropropane	Discharge from use in chemical manufacturing	Some people who drink water containing 2,2-dichloropropane at high concentrations for many years could experience central nervous system effects.
1,3-Dichloropropane (142289)	Discharge from use in chemical manufacturing	Some people who drink water containing 1,3-dichloropropane at high concentrations for many years could experience central nervous system effects.
1,1-Dichloropropene	Discharge from use in chemical manufacturing	Some people who drink water containing 1,1-dichloropropene at high concentrations for many years could experience central nervous system effects.
1,3-Dichloropropene ( <i>cis,trans</i> ) (542756)	Run-off from use as a nematocide	Some people who drink water containing <i>cis</i> and <i>trans</i> -1,3-dichloropropene at high concentrations for many years could experience Irritation of the eyes, ears, nose and throat or cancer.
Dieldrin (60571)	Run-off from pesticide application	Some people who drink water containing dieldrin at high concentrations for many years could experience liver damage, convulsions, or cancer.
Hexachlorobutadiene (87683)	Discharge from use as an industrial solvent	Some people who drink water containing hexachlorobutadiene at high concentrations for many years could experience kidney effects and effects on the fetus.
3-hydroxycarbofuran	Breakdown product from the use of the pesticide carboxyfurane	Some people who drink water containing 3-hydroxycarbofuran at high concentrations for many years could experience liver effects.
Isopropylbenzene (98828)	Discharge from chemical manufacturing	Some people who drink water containing isopropylbenzene at high concentrations for many years could experience central nervous system effects.
Isopropyltoluene	Discharge from chemical manufacturing	Some people who drink water containing isopropyltoluene at high concentrations for many years may experience central nervous system effects.
Methomyl (16752775)	Runoff from use as an insecticide	Some people who drink water containing methomyl at high concentrations for many years could experience kidney effects.
Metolachlor (51218452)	Run-off from use as a herbicide	Some people who drink water containing metolachlor at high concentrations for many years could experience cancer.
Metribuzin (21087649)	Run-off from use as a herbicide	Some people who drink water containing metribuzin at high concentrations for many years could experience liver and kidney effects.
Naphthalene (91203)	Discharge from use in mothballs and other domestic products	Some people who drink water containing naphthalene at high concentrations for many years could experience damage to red blood cells, nausea and vomiting.

<b>CHEMICAL (CASRN)</b>	<b>SOURCE TO DRINKING WATER</b>	<b>HEALTH EFFECTS</b>
N-nitrosodimethylamine (NDMA) 62759	Discharge from industrial use; as a by-product of drinking water treatment; produced from naturally occurring precursor chemicals	Some people who drink water containing NDMA at high concentrations as well as infants born to pregnant women who drink the water may experience an increased risk of cancer. This chemical may also produce liver disease and kidney effects after short-term exposure to high doses or long-term exposure to lower doses.
Perchlorate (Various CASRN numbers for different chemical species)	Rocket propellants, fireworks, munitions, flares, blasting agents	Perchlorate interferes with the normal function of the thyroid gland and thus has the potential to affect growth and development, causing brain damage and other adverse effects, particularly in fetuses and infants. Pregnant women, the fetus, infants, children up to the age of 12, and people with a hypothyroid condition are particularly susceptible to perchlorate toxicity.
Propachlor (1918167)	Run-off from use as a herbicide	Some people who drink water containing propachlor at high concentrations for many years could experience liver effects.
n-propylbenzene (103651)	Discharge from chemical manufacturing	Some people who drink water containing n-propylbenzene at high concentrations for many years may experience central nervous system effects.
Sulfate	Natural sources	Some people who drink water containing sulfate at high concentrations for many years could experience diarrhea.
1,1,1,2-Tetrachloroethane (630206)	Discharge from use in chemical manufacturing	Some people who drink water containing 1,1,1,2-tetrachloroethane at high concentrations for many years could experience liver effects.
1,1,2,2-tetrachloroethane (79345)	Discharge from use in dry cleaning	Some people who drink water containing 1,1,2,2-tetrachloroethane at high concentrations for many years could experience nausea, vomiting and liver damage.
1,2,3-trichlorobenzene	Discharge from use in chemical manufacturing	Some people who drink water containing 1,2,3-trichlorobenzene at high concentrations for many years could experience liver effects.
Trichlorofluoromethane (Freon 11) (75694)	Discharge from use as a refrigerant	Some people who drink water containing trichlorofluoromethane at high concentrations for many years could experience central nervous system effects.
1,2,3-trichloropropane (96184)	Discharge from use in paint and varnish removers	Some people who drink water containing 1,2,3-trichloropropane at high concentrations for many years could experience liver damage.
1,2,4-trimethylbenzene (95636)	Discharge from use in dyes and paints	Some people who drink water containing 1,2,4-trimethylbenzene at high concentrations for many years could experience central nervous system effects.
1,3,5-trimethylbenzene (108678)	Discharge from use in chemical manufacturing	Some people who drink water containing 1,3,5-trimethylbenzene at high concentrations for many years could experience central nervous system effects.

\* In these cases DEP must determine that no other sources of chlorine are present.

One of the reasons these chemicals are currently “unregulated” is that there is usually little toxicity information available for these compounds. Please contact DEP Office of Research and Standards (ORS) at (617) 556-1157 for health risk information on these chemicals.

## Interpreting Monitoring Data

Below are examples prepared by EPA of how systems determine the highest compliance value and the range of detected levels of contaminants under the following monitoring scenarios:

### 1). Compliance with the MCL is determined annually or less frequently.

1 sampling site/1 sampling date.

March 2004 - 0.003
<b>REPORT IN TABLE:</b> Highest Detected Level = 0.003. Report no range

Multiple sampling sites/1 sampling date.

Barium	Feb 1998
well #1	0.60
well #2	0.46
well #3	Nd
<b>REPORT IN TABLE:</b> Highest Level = 0.60 AND Range = nd - 0.60	

### 2). Compliance with MCL determined by a running annual average of all samples taken from a sampling point.

1 sampling site/multiple sampling dates.

Atrazine	1 <sup>st</sup> quarter 2004	2 <sup>nd</sup> quarter 2004	3 <sup>rd</sup> quarter 2004	4 <sup>th</sup> quarter 2004
well #1	0.8	3.8	2.1	0.9
<b>REPORT IN TABLE:</b> Average = 1.9 AND Range = 0.8 - 3.8				

3). **Compliance with MCL determined by a running annual average of all samples at all sampling points + TTHMs example.**

Multiple sampling sites/multiple sampling dates.

TTHMs	2 <sup>nd</sup> quarter 2003	3 <sup>rd</sup> quarter 2003	4 <sup>th</sup> quarter 2003	1 <sup>st</sup> quarter 2004	2 <sup>nd</sup> quarter 2004	3 <sup>rd</sup> quarter 2004	4 <sup>th</sup> quarter 2004
site #1	-	-	-	45	60	125	70
site #2	-	-	-	40	55	115	60
site #3	-	-	-	45	60	105	70
site #4	-	-	-	50	65	135	80
Quarterly Average	55	125	65	45	60	120	70
Running Annual Average	-	-	-	73	74	73	74
<b>REPORT IN TABLE:</b> Highest Annual Average = 74 AND Range = 40 -135							
<p><b>Note:</b> The averages for the last 3 quarters of 2003 are shown because they are needed to compute the running annual average. The reported range would include only detection data from 2004, unless one of the values from the previous year was so extraordinary that consumers would need it to understand the reported annual average.</p> <p>As discussed in Section I, B.1 - Item 6 of the implementation guidance, if any of the above values for the running annual average were above 80 (the revised MCL for TTHMs, effective in 2001) the report would need to include health effects language for TTHMs, even though the system was not actually in violation yet.</p>							

#### 4). Lead and Copper

If a system detects either lead or copper, the CCR must include the 90<sup>th</sup> percentile value from the most recent sampling and the number of sampling sites exceeding the action level.

	site 1	site 2	site 3	site 4	site 5	site 6	site 7	site 8	site 9	Site 10
July 2003	nd	nd	8	12	19	3	nd	nd	4	22
<b>REPORT IN TABLE:</b> 90 <sup>th</sup> percentile = 19 AND Number of Sites above AL (15) = 2										

EPA defines the 90<sup>th</sup> Percentile as the equation:

$(\text{Number of samples}) \times (0.9) = \text{the sample corresponding to the 90}^{\text{th}} \text{ percentile.}$

Therefore, if a system collects 10 samples, the 90<sup>th</sup> percentile would be the 9<sup>th</sup> highest sample (10 x 0.9). In the example above, the detect value of 19 is the 9<sup>th</sup> highest value in the 10 sites sampled.

#### Educational Statement for Lead

If lead is detected above the action level in more than 5 percent but fewer than 10 percent of homes sampled, the following statement about the impact of lead on children must be included in the CCR:

*Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).*

If lead is detected under the circumstances described above:

Systems that take **20 or more** samples must include the educational statement.

Systems that collect **fewer than 20** samples do not have to include the educational statement.

### Health Effects Language for Lead and Copper

Explanations of action level exceedences or violations of Subpart I [40 CFR 141.80 - 141.84] must include potential health effects language from Attachment C to Subpart O of the regulation. A copy of that Attachment is provided in Attachment C of this guidance.

**Lead:**

*Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning disabilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.*

**Copper:**

*Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.*

## 5). Turbidity

When reporting data pursuant to 40 CFR 141.73 - turbidity as a TT/indicator of filtration performance, the highest single measurement and the lowest monthly percentage of samples meeting the requirements specified for the relevant filtration technology must be included in the report. A system may wish to present the data as follows:

Contaminant	MCL	MCLG	Level Found	Range of Detections	Violation	Date of Sample	Typical Source of Contaminant
Turbidity	TT = 5 NTU	n/a	1	-	no	-	Soil runoff
	TT=percentage of samples <0.5 NTU		96%	-			

As discussed in Section I, B.1-Item 4 of the implementation guidance, reporting turbidity based upon the revised requirements in 40 CFR 141.173 is not required until the CCR due in 2003.

As part of an explanation for measuring turbidity, systems may wish explain that turbidity is a measure of treatment performance and is regulated as a treatment technique.

## 6). Beta Particles

The MCL for beta particles is 4 mrem/year. EPA recognizes that labs often report these results in pCi/l, and that there is no simple conversion between the two units. Therefore, it is acceptable for systems to report the detected level for beta particles in pCi/l. So that consumers may have a standard against which to compare the detected level, systems should place 50 in the MCL column and include a footnote explaining that EPA considers 50 pCi/l to be a level of concern for beta particles.

Contaminant	MCL	MCLG	Level Found	Range of Detections	Violation	Date of Sample	Typical Source of Contaminant
Beta particles (pCi/l)	50*	0	10	nd-10			Decay of natural and man-made deposits

\*The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/l to be the level of concern for beta particles.

Systems that detect beta particles at or above 50 pCi/l must determine the actual radioactive constituents present in the water to calculate the dose exposure level in mrem/yr, and must report both the detected level and the MCL as mrem/yr.

## 7). Monitoring Waivers

Systems that have monitoring waivers, or for another reason monitor less often than once per year, must include information on contaminants detected in the most recent testing period. The report must also contain a brief explanation that the data for those contaminants is from the most recent testing done.

If sampling was not performed for a given parameter in the calendar year covered by the report, then data going back a maximum of five years must be used.

As shown in the CCR example, for ease of presentation a column for the date of the last sample can be included in the table with the corresponding explanation outside of the table.

Contaminant	MCL	MCLG	Level Found	Range of Detections	Violation	Date of Sample	Typical Source of Contaminant
Cyanide (ppb)	200	200	10			Feb 2002	Discharge from steel/metal industry; discharge from fertilizer and plastic factories
Selenium (ppb)	50	50	1			Feb 2002	Discharge from petroleum and metal refineries

*Most of the data presented in this table is from testing done between January 1 - December 31 2002. We monitor for some contaminants less than once per year, because the concentrations for those contaminants are not expected to vary significantly from year to year. As a result, some of our data though representative is more than a year old. For those contaminants, the date of the last sample is shown in the table.*

## 8). MCL (Maximum Contaminant Level)

The table(s) must contain the MCL for detected contaminants expressed as a number equal to or greater than 1.

For any contaminant detected in violation of an MCL, a TT, or exceeding an action level, the table(s) must contain a clear indication of the violation or exceedence.

Generally, the state and federal MCLs are the same for most contaminants. In cases where a state MCL may be more stringent than the federal standard, EPA recommends that the system indicate this in the report. For example:

- Include the MCL in the table and highlight the MCL through a different font or asterisk. Explain in a footnote that the state MCL is stricter than the federal standard. (as shown in the sample CCR).
- Placing both a federal and state MCL column in the table.

Contaminant	Federal Standard		State MCL	Level Found	Range of Detections	Violation	Date of Sample	Typical Source of Contaminant
	MCL	MCLG						
Barium (ppb)	2	2	1	1	0.03-1			Discharge from drilling wastes and metal refineries

A system may also wish to highlight the case where there is no federal standard and the state has developed its own standard, using similar techniques.

## 9). NPDWR Violations

The CCR must include a clear and readily understandable explanation of any NPDWR violation during the reporting period, as well as any potential adverse health effects and the steps the CWS has taken to correct the violation.

## Potential Health Effects Language

Of the seven NPDWR violations identified in the rule, EPA is prescribing mandatory health effects language for only three violations:

### 1. Filtration and disinfection prescribed by Subpart H.

*Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.*

### 2. Lead and copper control requirements.

Lead: *Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning disabilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.*

Copper: *Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.*

### 3. Treatment techniques for acrylamide and epichlorohydrin.

Acrylamide: *Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.*

Epichlorohydrin: *Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.*

For the remaining violations, a system may use language from Attachment C to Subpart O of the regulation, or design language that is tailored to that specific violation.

## 10). Monitoring and Reporting (M&R) Violations

Some contaminants are monitored for daily, others need to be checked far less frequently (every nine years is the longest monitoring cycle). For instance, at a minimum, drinking water systems will monitor continuously for turbidity, monthly for bacteria, and once every four years for radionuclides. An M&R violation means that the system did not perform the required testing, take adequate samples, or report a violation as required. Most of the violations experienced by CWSs are for failure to monitor the drinking water and report the results.

As shown in the CCR example, a column for violations can be placed in the detected contaminants table and further explanation of the violation presented outside of the table. In that explanation the system can indicate that while monitoring and reporting violations do not necessarily indicate a health risk. But, if a system fails to monitor it may not be aware of the potential health risk posed by a contaminant which may be present, but undetected.

If a system has multiple monitoring violations, it may be simpler and shorter to list them in a table followed by a short explanation. The table could include columns for monitoring periods, number

of samples required during the period, number of samples actually taken and whether samples were taken during the following monitoring period. However, all monitoring violations are not the same and in some instances, the CWS may believe it is more appropriate to describe each violation in a short paragraph. For example, a coliform violation in which one of 100 samples was missed is less serious than missing one of two required samples.

Multiple monitoring violations listed in a table:

*We failed to complete required sampling in a timely manner. Because we did not take the required number of samples, we did not know whether the contaminants were present in your drinking water, and we are unable to tell you whether your health was at risk during that time. The contaminants for which monitoring was not done are listed in the table below, with the period during which samples should have been taken, the number of samples each contaminant required, the number taken, and when required sampling will resume.*

Contaminant	Monitoring Period	Number of Samples Required	Number of Samples Taken	Date Sampling Will Resume
VOCs <sup>1</sup>	1/2002-12/2004	1	0	2/2005
Total Coliform Bacteria	10/1/2004-10/31/2004	100	93	11/2004

<sup>1</sup> VOCs also known as organic compounds, are tested by collecting one sample and testing that sample for all VOCs. VOCs include benzene, carbon tetrachloride, chlorobenzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, cis-dichloroethylene, trans-dichloroethylene, dichloromethane, 1,2-dichloropropane, ethylbenzene, styrene, tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene, toluene, 1,2,4-trichlorobenzene, 1,1-dichloroethylene, 1,1,2-trichloroethane, vinyl chloride, and xylene.

Although monitoring may be done by group as opposed to each contaminant, each contaminant should be listed for not monitoring because each is a violation. For the example above, a footnote was added to list all of the VOCs.

Regardless of whether the violation information is presented in tabular or paragraph form or a combination thereof, an explanation of the potential health effects and steps to correct the violation must also be included. If a system failed to take the sample on time, the report should say "health effects unknown." If the system took the samples accurately and on-time, but mailed the results late, the system does not need to discuss health effect.

## Treatment Techniques

### **Packed Column Aeration (VOC removal)**

It is possible to remove many volatile organic compounds from water by aerating it and turning the contaminants into vapor. The [PWS name] pumps its water to the top of a large tower, which is filled with specially designed packing material. As the water trickles down the tower, air is pumped in from the bottom. This process breaks the water up into tiny particles and allows the air to strip away the volatile contaminants.

### **Conventional Filtration (coagulation, flocculation, sedimentation)**

Small particles and organisms such as sediment, algae and bacteria can cause water to take on unpleasant odors or tastes, and sometimes make it unhealthy to drink. To remove this material, it is necessary to chemically treat the water and then pass it through a filter.

The process begins with [chemical name(s)] being added to the water at an established rate. This prompts the small particles to coagulate, or stick together and form particles of increasing size. Heavier particles sink to bottom of large settling basins while the cleaner water flows onto a filter bed. Filters are comprised of several layers of coarse and fine sand and gravel, which trap the small particles that did not settle out previously. Over time, filters start to clog and need to be cleaned using a high-flow backwash process.

All chemicals used for coagulation are approved for water treatment by one of the following organizations: National Sanitation Foundation (Now known as NSF International), or UL, both accredited by the American National Standards Institute (ANSI). Chemicals also have to meet performance standards established by the American Water Works Association.

### **Conventional Filtration (with coagulation, flocculation & tube settling)**

Small particles and organisms such as sediment, algae and bacteria can cause water to take on unpleasant odors or tastes, and sometimes make it unhealthy to drink. To remove this material, it is necessary to chemically treat the water and then pass it through a filter.

The process begins with [chemical name(s)] being added to the water. This prompts the small particles to coagulate, or stick together and form particles of increasing size. After these particles form, the water enters a large chamber containing a series of tube settlers. These tubes are about 2 inches across, from two to three feet long and are placed at a 60degree angle. Tube settlers provide a small, still environment where heavier particles can settle. The cleaner water then flows onto a filter bed. Filters are comprised of several layers of coarse and fine sand and gravel, which trap the small particles that did not settle out previously. Over time, filters start to clog and need to be cleaned using a high-flow backwash process.

All chemicals used for coagulation are approved for water treatment by one of the following organizations: National Sanitation Foundation (Now known as NSF International), or UL, both accredited by the American National Standards Institute (ANSI). Chemicals also have to meet performance standards established by the American Water Works Association

### **Direct Filtration (without flocculation/sedimentation)**

Small particles and organisms such as sediment, algae and bacteria can cause water to take on unpleasant odors or tastes, and sometimes make it unhealthy to drink. To remove this material, it is necessary to chemically treat the water and then pass it through a filter.

The process begins with [chemical name(s)] being added to the water at a calculated rate. This prompts the small particles to coagulate, or stick together, and form particles of increasing size. The chemically treated water then flows onto a filter bed. Filters are comprised of several layers of coarse and fine sand and gravel, which trap the small particles that did not settle out previously. Over time, filters start to clog and need to be cleaned using a high-flow backwash process.

All chemicals used for coagulation are approved for water treatment by one of the following organizations: National Sanitation Foundation (Now known as NSF International), or UL, both accredited by the American National Standards Institute (ANSI). Chemicals also have to meet performance standards established by the American Water Works Association

### **Adsorption Clarification (package plant)**

Small particles and organisms such as sediment, algae and bacteria can cause water to take on unpleasant odors or tastes, and sometimes make it unhealthy to drink. To remove this material, it is necessary to chemically treat the water and then pass it through two types of filtering units – an adsorption clarifier and a mixed media filter bed.

The process begins with [chemical name(s)] being added to the water at an established rate. This prompts the small particles to coagulate, or stick together and form particles of increasing size. The chemically treated water then flows into the adsorption clarifier, which is a chamber filled with buoyant adsorption media. As the turbulent water passes through this unit, the large particles adhere to the beads. This effectively removes up to 95 percent of all impurities. The cleaner water then flows onto a filter bed. Filters are comprised of several layers of coarse and fine sand and gravel, which trap the remaining particles. Over time, filters start to clog and need to be cleaned using a high-flow backwash process.

All chemicals used for coagulation are approved for water treatment by one of the following organizations: National Sanitation Foundation (Now known as NSF International), or UL, both accredited by the American National Standards Institute (ANSI). Chemicals also have to meet performance standards established by the American Water Works Association.

### **Slow Sand Filtration**

Small particles and organisms such as sediment, algae and bacteria can cause water to take on unpleasant odors or tastes, and sometimes make it unhealthy to drink. To remove this material, it is necessary to pass it through a sand filter bed that has three to four feet of sand over one foot of graded gravel.

Water is poured onto the top of the filter and passes slowly through the sand. This traps most of the particles. By the time the water reaches the bottom of the filter, better than 90 percent of all impurities have been removed. Over time, the sand filter starts to clog. When this happens, it is necessary to remove the top portion of the filter and replace it with clean sand.

### **Iron & Manganese Removal (oxidation and filtration)**

Iron and manganese are often present in groundwater at levels that can discolor the water, or cause it to take on unpleasant odors or tastes. Even though the water may still be safe to drink, it is preferable that the iron and manganese be removed.

Removal generally requires a two-step process of oxidation and filtration. Oxidation is accomplished by adding [*chlorine, potassium permanganate*] to the water. This causes the iron and manganese to form tiny particles. Once this happens, the water passes through special filters consisting of material that is

specifically designed to capture iron and manganese particles. Over time, filters start to clog and need to be cleaned using a high-flow backwash process.

### **Sequestration (for iron & manganese)**

Iron and manganese are often present in groundwater at levels that can discolor the water, or cause it to take on unpleasant odors or tastes. Even though the water may still be safe to drink, treatment is often desirable.

Treatment consists of adding [*polyphosphates, tripolyphosphate, metaphosphate, or silicate*] to water. This results in a chemical reaction, known as sequestration, which prevents the iron and manganese from forming nuisance particles.

All chemicals used for sequestration are approved for water treatment by one of the following organizations: National Sanitation Foundation (Now known as NSF International or UL, both accredited by the American National Standards Institute (ANSI). Chemicals must also meet standards established by the American Water Works Association.

### **Primary Disinfection with Ozone (with filtration)**

All reservoirs and some groundwater sources contain numerous microorganisms, some of which can cause people to become sick. To eliminate disease-carrying organisms, it is necessary to disinfect the water.

Disinfection does not sterilize the water; it removes harmful organisms. Sterilization is too costly and kills all microorganisms, even though most are not harmful. The [*PWS Name*] uses ozone, a unique form of oxygen that kills harmful organisms, as its primary disinfectant. The ozone generating equipment at the water treatment plant allows reactive gas to be bubbled into water in large contact basins. When combined with proper filtration, disinfection with ozone has been proven effective at ensuring that water is free of harmful organisms and safe to drink.

### **Primary Disinfection with Chlorine (with filtration)**

All reservoirs and some ground water sources contain numerous microorganisms, some of which can cause people to become sick. To eliminate disease-carrying organisms, it is necessary to disinfect the water.

Disinfection does not sterilize the water; it removes harmful organisms. Sterilization is too costly and kills all microorganisms, even though most are not harmful. The [*PWS Name*] uses [*chlorine gas or sodium hypochlorite*] as its primary disinfectant. Chlorine destroys organisms by penetrating cell walls and reacting with enzymes. When combined with proper filtration, disinfection with chlorine has been proven effective at ensuring that water is free of harmful organisms and safe to drink.

### **Primary Disinfection with Chlorine (without filtration)**

All reservoirs and some ground water sources contain numerous microorganisms some of which can cause people to be sick. To eliminate disease carrying organisms it is necessary to disinfect the water.

Disinfection does not sterilize the water, but it does destroy harmful organisms. Sterilization kills all microorganisms, even though most are not harmful, and is too costly to use on a routine basis. The [*PWS Name*] uses [*chlorine gas or sodium hypochlorite*] as its primary disinfectant. Chlorine destroys

organisms by penetrating cell walls and reacting with enzymes. Disinfection with chlorine has been proven effective at ensuring that water is free of harmful organisms and safe to drink.

### **Chloramination**

Once water has been filtered or disinfected, steps must be taken to guard against harmful organisms that may be present in the pipes that distribute water to local homes and businesses. For this reason, ammonia is added to the water as it enters the distribution system.

Ammonia reacts with previously added chlorine to create a long-lasting disinfectant known as chloramine. This prevents bacterial growth in distribution pipes. It also minimizes the formation of trihalomethanes, which have been found to cause cancer in laboratory animals and are formed when chlorine reacts with organics that occur naturally in water.

The [PWS name] adds ammonia to its water. This, in conjunction with chlorine, has been effective at preventing bacterial regrowth throughout the entire distribution system.

### **Corrosion Control through pH Adjustment**

Many drinking water sources in New England are naturally corrosive (i.e. they have a pH of less than 7.0). So, the water they supply has a tendency to corrode and dissolve the metal piping it flows through. This not only damages pipes but can also add harmful metals, such as lead and copper, to the water. For this reason it is beneficial to add chemicals that make the water neutral or slightly alkaline.

This is done by adding any one, or a combination of several, approved chemicals. The [PWS Name] adds [chemical name(s)] to its water. This adjusts the water to a non-corrosive pH. Testing throughout the water system has shown that this treatment has been effective at reducing lead and copper concentrations.

All chemicals used for coagulation are approved for water treatment by one or of the following organizations: National Sanitation Foundation (Now known as NSF International), or UL, both accredited by the American National Standards Institute (ANSI). Chemicals also have to meet performance standards established by the American Water Works Association.

### **Corrosion Control through Inhibitor Addition**

Many drinking water sources in New England are naturally corrosive (i.e. they have a pH of less than 7.0). So, the water they supply has a tendency to corrode and dissolve the metal piping it flows through. This not only damages pipes but can also add harmful metals, such as lead and copper, to the water. For this reason it is sometimes beneficial to add chemicals that can form a protective coating on the inside of pipes.

These chemicals are often referred to as corrosion inhibitors and normally contain small concentrations of either phosphates or silicates. The [PWS Name] adds [chemical name] to its water. Testing throughout the water system has shown that this treatment has been effective at reducing lead and copper concentrations.

All chemicals used for coagulation are approved for water treatment by one of the following organizations: National Sanitation Foundation (Now known as NSF International), or UL, both accredited by the American National Standards Institute (ANSI). Chemicals also have to meet performance standards established by the American Water Works Association.

### **Corrosion Control through pH Adjustment and Inhibitor Addition**

Many drinking water sources in New England are naturally corrosive (i.e. they have a pH of less than 7.0). So, the water they supply has a tendency to corrode and dissolve the metal piping it flows through. This not only damages pipes but can also add harmful metals, such as lead and copper, to the water. For this reason it is beneficial to add chemicals that provide a protective pipe coating and make the water neutral or slightly alkaline.

This is done by adding combinations of water treatment chemicals. The [PWS Name] adds [*chemical name(s)*] to its water. [*Chemical name*] is often referred to as an inhibitor and is what coats the inside of the pipe. It contains a small concentration of [*silicate or phosphate*]. [*Chemical name*] raises the water's pH to a non-corrosive level]. Testing throughout the water system has shown that this treatment has been effective at reducing lead and copper concentrations.

All chemicals used for coagulation are approved for water treatment by one of the following organizations: National Sanitation Foundation (Now known as NSF International), or UL, both accredited by the American National Standards Institute (ANSI). Chemicals also have to meet performance standards established by the American Water Works Association.

## Sample SWAP Language for Your CCR For Community Public Water Systems

Once a SWAP report is completed for your system, your CCR must include;

1. where to obtain a copy of the SWAP Report, and
2. a brief summary of your system's susceptibility from the report.

The DEP recommends that public water suppliers provide additional information to alleviate consumer concerns. The following sample language is provided to help you summarize the Source Water Assessment Program (SWAP) Report for your system in your Consumer Confidence Report (CCR). Replace the items in brackets below with your system-specific information, or you may choose your own format for the summary.

### **REQUIRED**

#### **What Is My System's Ranking?**

A susceptibility ranking of [high, moderate or low] was assigned to this system using the information collected during the assessment by the DEP.

#### **Where Can I See The SWAP Report?**

The complete SWAP report is available [at the water department, Board of Health, or other location] and online at [www.state.ma.us/dep/brp/dws/](http://www.state.ma.us/dep/brp/dws/). For more information, call [water system contact and phone number].

### **OPTIONAL**

#### **What Is SWAP?**

The Source Water Assessment and Protection (SWAP) program assesses the susceptibility of public water supplies.

#### **What Are The Key Issues For Our Water Supply?**

The SWAP Report notes the key issues of [key issues from the Discussion section of the SWAP Report] in the water supply protection area for source(s) [names]. The report commends the water system on [existing source protection measures].

#### **What Can Be Done To Improve Protection?**

The SWAP report recommends:

- [key recommendations]
- [key recommendations].

#### **[The PWS] plans to address the protection recommendations by:**

- [PWS plans]
- [PWS plans].

#### **Residents can help protect sources by:**

- [examples: practicing good septic system maintenance,
- supporting water supply protection initiatives at the next town meeting
- taking hazardous household chemicals to hazardous materials collection days,
- contacting the water department or Board of Health to volunteer for monitoring or education outreach to schools,
- limiting pesticide and fertilizer use, etc.]

## **Using Environmentally Friendly Materials to Prepare Your Annual Drinking Water Report**

As this is an environmental report developed to inform the public, you may want to consider the use of environmentally preferable materials in printing up the report. This is a statement to the public that you, and they, can take actions to help protect drinking water. You may want to add a statement to the bottom of the report that highlights whichever environmental features you choose. This is just one way to show your community the numerous efforts you undertake to provide them with the highest quality water, and to emphasize that personal actions can make a difference. We recommend that you consider the following ways to make your report environmentally preferable:

### **Paper**

Paper with a high percentage of recycled fibers is the first and easiest place to start. The most important thing to look for is the level of post-consumer content. In general, at virtually any print shop, you should be able to use 30 percent post-consumer paper for only a small fraction more than regular paper, and this is the minimum standard used by the Federal government and several states, including Massachusetts. One hundred percent post-consumer recycled paper is also readily available; however, this will cost more. Since paper is usually only about 20% of the total cost of a print job, we recommend you use paper with the highest post-consumer recycled content your budget allows.

As the bleach used to make paper white can cause water pollution, and are known to be some of the more toxic drinking water contaminants, we recommend the use of paper which is “process-chlorine free,” or PCF, which is available at many print shops for a small charge. You may also want to consider using “tree-free” paper, such as paper from kenaf, since this material needs significantly fewer chemicals to process and is a much more sustainable natural resource than the cutting down of trees.

### **Ink**

Using soy based inks are preferable to petroleum based inks, and are generally available in the basic colors at similar prices. Ask your printer for soy ink availability and cost.

### **Education**

Letting the public know that you are using environmentally preferable products is important. Make sure your printer places a recycled logo and the words “printed on recycled paper” if you use recycled content paper. In addition, if you are using PCF paper or soy inks, you can put that on your document as well. There is also no harm in identifying the actual recycled content (e.g. 30% post-consumer content) if you so desire.

### **Mailing**

If possible, consolidate your report into a billing or a newsletter mailing. Not only will this save paper and energy, but also it will be less costly.

## Language Requirements per City/Town

City	Languages for complete CCR translation						
Chelsea	Spanish						
Fall River	Portuguese						
Holyoke	Spanish						
Lawrence	Spanish						
New Bedford	Portuguese						
City	Languages for info statement on importance of CCR						
Acushnet	Portuguese						
Amherst	Spanish	Chinese					
Arlington	Greek	Italian					
Attleboro	Portuguese						
Blackstone	French						
Boston	German	Greek	Indic	Italian	French	Portuguese	Spanish
	Russian	Arabic	Chinese	Japanese	Mon-Khmer	Vietnamese	Polish
Brockton	French	Portuguese	Spanish				
Brookline	Spanish	Russian	Chinese				
Cambridge	Italian	French	Portuguese	Spanish	Chinese	Korean	
Chicopee	French	Spanish	Polish				
Dartmouth	Portuguese						
Dracut	French						
Everett	Italian						
Fairhaven	Portuguese						
Fall River	French						
Fitchburg	French	Spanish					
Framingham	Portuguese	Spanish					
Gardner	French						
Gloucester	Italian						
Haverhill	Greek	Spanish					
Holyoke	French						
Hudson	Portuguese						
Lawrence	Italian	French					
Leominster	French	Spanish					
Lowell	Greek	French	Portuguese	Spanish	Mon-Khmer		
Ludlow	Portuguese						
Lynn	Greek	French	Spanish	Mon-Khmer			
Malden	Italian	Spanish	Chinese				
Medford	Italian						
Methuen	Italian	French	Spanish				
Milford	Portuguese						
New Bedford	French	Spanish					
Newton	Italian	Spanish	Chinese				
Peabody	Greek	Portuguese	Spanish				
Quincy	Italian	Spanish	Chinese				

Randolph	Chinese						
Revere	Italian	Spanish					
Salem	French	Spanish					
Somerset	Portuguese						
Somerville	Italian	French	Portuguese	Spanish			
Southbridge	French	Spanish					
Springfield	Italian	French	Portuguese	Spanish	Polish		
Stoneham	Italian						
Stoughton	Portuguese						
Swansea	Portuguese						
Taunton	Portuguese	Spanish					
Waltham	Italian	French	Spanish				
Watertown	Italian						
Westfield	Spanish						
Westport	Portuguese						
Worcester	Greek	Italian	French	Spanish	Polish	Vietnamese	

**Sample CCR**  
**2000 Water Quality Report**  
**Smithville Water District**  
**Swift Falls, Massachusetts**  
**PWS ID#5420000**

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**This brochure is a snapshot of the quality of the water that we provided last year.** Included are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards. We are committed to providing you with information because informed customers are our best allies. For more information about your water, call Joe Sampson, Water Superintendent, at 617-867-5309.

**Last year, we conducted more than 500 tests** for over 80 drinking water contaminants. We only detected 7 contaminants, and found only atrazine at a level higher than the state allows. As we told you in a letter at the time, our water was temporarily unsafe. For more information, see the paragraph on the last page of this report marked "**Violation**".

**Your water comes from three municipal wells** sunk about 500 feet into an underground source of water called the Low Plain Aquifer. These wells are located west of town on Main Street, behind the municipal garage. The town owns the land around these wells and restricts **any** activity that could contaminate them.

After the water comes out of the wells, we treat it to remove several contaminants and we also add disinfectant to protect you against microbial contaminants.

**Our Water Board meets** on the first Tuesday of each month at 7:30 pm in the Town Hall. Please feel free to participate in these meetings.

**Some people may be more vulnerable** to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

**In order to ensure that tap water is safe** to drink, the Massachusetts Department of Environmental Protection (DEP) and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The US Food and Drug Administration and the MA Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

**Drinking water, including bottled water**, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling EPA's Safe Drinking Water Hotline (800-426-4791)

**The sources of drinking water** (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

**Contaminants that may be present in source water before we treat it** include:

*Microbial contaminants*, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

*Inorganic contaminants*, such as salts and metals, which can be naturally occurring or result from urban storm water runoff.

*Pesticides and herbicides*, which may come from a variety of sources such as agriculture, and residential uses.

*Radioactive contaminants*, are naturally occurring.

*Organic chemical contaminants*, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

### **Information on Protecting Your Water:**

The DEP has completed a Source Water Assessment Report for all Community water systems. See Attachment G for sample source protection language.

## **WATER QUALITY DATA**

The following table lists all the drinking water contaminants that we detected during the 2000 calendar year or during the most recent sampling period within the past five years. These were the only contaminants detected in all the monitoring required by the state. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1-December 31, 2000. The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

Our system has had our monitoring requirements for synthetic organic compounds (SOCs) reduced by the Massachusetts Department of Environmental Protection to less than once per year because the source is not at risk of contamination. The last SOC sample was collected on 3/16/99 and was found to be free of this contaminant.

### **Terms & abbreviations used in the table:**

- **Maximum Contaminant Level Goal (MCLG)**: the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Maximum Contaminant Level (MCL)**: the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- **Action Level (AL)**: the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **n/a**: not applicable • **nd**: not detectable at testing limit • **ppb**: parts per billion or micrograms per liter
- **ppm**: parts per million or milligrams per liter • **pCi/l**: picocuries per liter (a measure of radiation)

Inorganic Contaminants	MCL	MCLG	Smithville water	Range of detections	Sample Date	Violation	Typical Source of Contaminant
Fluoride (ppm) -	2 <sup>1</sup>	4	0.98		2/10/00		water additive which promotes strong teeth
Nitrate as nitrogen (ppm)	10	10	6	nd-9	7/19/00		runoff from fertilizer use
<b>Organic Chemical Contaminants</b>							
Atrazine (ppb)	3	3	3.275	.1-10	See below	<b>YES</b>	runoff from herbicide used on row crops
Total Trihalomethanes (TTHMs) (ppb)	100	n/a	73	40-135	2/15/00, 5/09/00, 7/19/00, 11/12/00		by-product of drinking water chlorination
<b>Radionuclides</b>							
Beta/photon emitters (pCi/L)	50 <sup>2</sup>	0	10		5/7/99 <sup>3</sup>		erosion of natural deposits

Lead	AL	MCLG	Smithville water 90 <sup>th</sup> percentile level <sup>4</sup>	# of sites found above the AL	Typical Source of Contaminant
Lead (ppb)	15	0	2	1 site above AL out of 20 sites	sampled corrosion of household plumbing systems

<b>Unregulated Contaminants</b>			
Chloromethane (ppb)	not regulated	0.07	May 1995 EPA regulations require us to monitor this contaminant while EPA considers setting a limit on it.

<sup>1</sup> EPA's MCL for fluoride is 4 ppm. However, our state has set a lower MCL to better protect human health.

<sup>2</sup> The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/l to be the level of concern for beta particles.

<sup>3</sup> The DEP only requires our system to sample for radionuclides every 3 years.

<sup>4</sup> EPA requires that at least 90% of the sampled homes have lead levels under 15 ppb (the action level). The 90<sup>th</sup> percentile value represents the highest concentration found in 90% of the homes sampled.

**About nitrate:** Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

**Is our water system meeting other rules that govern our operations?** The state and EPA require us to test our water on a regular basis to ensure its safety. In February and May of this year, we received monitoring violations for nitrite and volatile organic compounds (VOCs). We took the samples at the required time but failed to submit the results of this monitoring to the state in a timely manner. At no time was a health threat present in the water. We are reviewing our procedures to ensure that this paperwork will be submitted in a timely manner in the future.

**Violation: About our atrazine violation:** During March, April and May, a big surge in the use of atrazine-based herbicides by area farmers caused our water to exceed the MCL for atrazine. We sent a notice warning you of this problem when it occurred. We are working with the state and local farmers to ensure that this never happens again, and we are monitoring atrazine levels monthly. We regret exposing you to any potential risk. You should know that some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties. If you want more information about atrazine or the violation, please call us (617-867-5309), Smithville County's health department (617-423-4444), or the state drinking water office (853-323-3333).